

Short article

After-effects of goal shifting and response inhibition: A comparison of the stop-change and dual-task paradigms

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In the present study, we tested three hypotheses that account for after-effects of response inhibition and goal shifting: the goal-shifting hypothesis, the reaction time (RT) adjustment hypothesis, and the stimulus–goal association hypothesis. To distinguish between the hypotheses, we examined performance in the stop-change paradigm and the dual-task paradigm. In the stop-change paradigm, we found that responding on no-signal trials slowed down when a stop-change signal was presented on the previous trial. Similarly, in the dual-task paradigm, we found that responding on no-signal trials slowed down when a dual-task signal was presented on the previous trial. However, after-effects of unsuccessful inhibition or dual-task performance were observed only when the stimulus of the previous trial was repeated. These results are consistent with stimulus–goal association hypothesis, which assumes that the stimulus is associated with the different task goals on signal trials; when the stimulus is repeated, the tasks goal are retrieved, and interference occurs.

Keywords: After-effects; Response inhibition; Multi-tasking; Goal shifting.

Sequential effects have received much attention because they may reflect the dynamics of cognitive control. Recently, several studies focused on after-effects in the stop-signal paradigm (e.g., Rieger & Gauggel, 1999; Verbruggen, Logan, Liefooghe, &

Vandierendonck, 2008). In the stop-signal paradigm, subjects perform a reaction task (the *GOI task*), and on a random selection of the trials, a stop signal instructs them to withhold their response. Rieger and Gauggel (1999) found

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